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M • O • E

TRAINING
PROGRAM



April 1, 1991 to March 31, 1992

HUMAN RESOURCES BRANCH

CALENDAR



Environment
Environnement

Ontario

M.O.E

TRAINING

PROGRAM

EXTERNAL CALENDAR

The courses contained in this calendar have been designed by the Ministry of the Environment and are made available to members of the private sector, municipalities, and various other agencies.

All course offerings by M.O.E. at the Brampton Training Centre between April 1, 1991 and March 31, 1992 are scheduled in this calendar. Offerings at Community Colleges are only scheduled to July 1, 1991. Please contact the listed Community Colleges for course offerings between July 1, 1991 and March 31, 1992.

Courses offered through this program are presently available in English only. Arrangements are being made to offer these courses in French through french language community colleges in the future. Contact Joan Brooker, Coordinator of Training and Development at (416) 323-4452 for further details.

Les cours offerts dans le cadre de ce programme sont donnés en anglais seulement. Des dispositions seront prises pour qu'à l'avenir ces cours soient également offerts en français dans les collèges communautaires de langue française. Pour de plus amples renseignements, veuillez communiquer avec Joan Brooker, coordonnatrice, Formation et perfectionnement, au (416) 323-4452.



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ADMINISTRATIVE PROCEDURES

MINISTRY OF THE ENVIRONMENT

TRAINING PHILOSOPHY

The Ministry of the Environment has a long standing commitment to the development of training to support the environmental protection programs in the municipal sector of Ontario. Historically, most of this training has been done at the Brampton Training Centre co-ordinated by Ministry of the Environment staff. More recently, the demand for this training has grown beyond the capacity of the Brampton Training Centre. To increase capacity, an arrangement has been made with several Community Colleges to offer certain training courses on our behalf.

In association with M.O.E., Training and Certification Section, the Community Colleges in the Province have formed the Ontario Environmental Training Consortium (O.E.T.C.). This group will offer programs in all parts of the Province utilizing community resources and expertise. Presentation of instructional materials, upgrading of curriculum and maintenance of M.O.E. certificate standards will be monitored so that all clients can confidently plan to meet their training needs.

The current range of programs that are being jointly supported by the M.O.E. and the consortium are listed in this calendar for your convenience. Members of the Ontario Environmental Training Consortium are:

Algonquin College, Ottawa
Cambrian College, Sudbury
Centennial College, Scarborough
Durham College, Oshawa
Fanshawe College, London
George Brown College, Toronto
Georgian College, Barrie
Humber College, Rexdale
La Cité Collegiale, Cornwall
Lambton College, Sarnia
Loyalist College, Belleville
Mohawk College, Hamilton
Niagara College, Welland
Northern College, South Porcupine
Sault College, Sault Ste. Marie
Seneca College, North York
Sheridan College, Brampton
Sir Sandford Fleming College, Lindsay
St. Clair College, Windsor
St. Lawrence College, Kingston

ADMINISTRATIVE PROCEDURES

ENROLMENT PROCEDURES FOR NON M.O.E. PERSONNEL

Complete the application form in the back of this calendar. Forward the completed form along with the registration fee to the agency that is delivering the course. Mailing addresses are listed below and on the back of the application form. Fees are payable by cheque or money order to the agency delivering the course.

Make Cheque Payable To:

Brampton Training Centre
135 St. Clair Avenue West
Toronto, Ontario
M4V 1P5
Phone: (416) 323-4615
Fax: (416) 323-4441
Attn.: Angie DeLeon

Treasurer of Ontario

Algonquin College
1385 Woodroffe Avenue
Nepean, Ontario
K2G 1V8
Phone: (613) 727-7627
Fax: (613) 727-7684
Attn.: Al Spriggs

Algonquin College

Cambrian College
1400 Barrydowne Rd.
Sudbury, Ontario
P3A 3V8
Phone: (705) 566-8101
Fax: (705) 524-7329
Attn.: Roger Martin

Cambrian College

Centennial College
P.O. Box 631, Station "A"
Scarborough, Ontario
M1K 5E9
Phone: (416) 439-7180
Fax: (416) 439-3334
Attn.: Tesh Akalehiykiot

Centennial College

Durham College
P.O. Box 385
Oshawa, Ontario
L1H 7L7
Phone: (416) 576-0210
Fax: (416) 436-9774
Attn.: Tony Day or Mike Vatcher

Durham College

Make Cheque Payable To:

Fanshawe College
School of Continuing Education
P.O. Box 4005
London, Ontario
N5W 5H1
Phone: (519) 452-4436
Fax: (519) 452-1342
Attn.: Jan Novotny

Fanshawe College

George Brown College
Dept. of Computer Science & Eng. Tech.
P.O. Box 1015, Station "B"
Toronto, Ontario
M5T 2T9
Phone: (416) 944-4376
Fax: (416) 944-4043
Attn.: Richard Smith

George Brown College

Georgian College
School of Continuing Learning
Georgian Drive
Barrie, Ontario
K6J 3S2
Phone: (705) 722-1951 Ext. 573
Fax: (705) 722-5123
Attn.: Paul Lima (Registration)
Angela Shama (Course Content)

Georgian College

Humber College
P.O. Box 1900
Rexdale, Ontario
M9W 5L7
Phone: (416) 675-3111 Ext. 4090
Fax: (416) 675-1453
Attn.: Glenn Mazer

Humber College

La Cité Collegiale
Pointe-au-moulin
Cornwall, Ontario
K6H 4Z1
Phone: (613) 938-2483
Fax: (613) 937-1509
Attn.: Renald Ayotte

La Cité Collegiale

Lambton College
Riverside Campus
265 N. Front St., P.O. Box 969
Sarnia, Ontario N7T 7K4
Phone: (519) 542-7751
Fax: (519) 332-6583
Attn.: Dianne Frenette-Fitzgerald (Registration)
Harry Gross (Course Content)

Lambton College

Make Cheque Payable To:

Loyalist College
P.O. Box 4200
Belleville, Ontario
K8N 5B9
Phone: (613) 969-1913
Fax: (613) 962-7984
Attn.: Bill Babbit or Betty Warren

Loyalist College

Mohawk College
Department of Physical Sciences
Fennell Avenue & West 5th St., Box 2034
Hamilton, Ontario
L8N 3T2
Phone: (416) 575-2148
Fax: (416) 575-2379
Attn.: Rick MacDonald

Mohawk Consulting Services

Niagara College
P.O. Box 1005
Welland, Ontario
L3B 5S2
Phone: (416) 735-2211
Fax: (416) 735-0419
Attn.: Peter Webb

Niagara College

Northern College
P.O. Box 2002
South Porcupine, Ontario
P0N 1H0
Phone: (705) 235-3211
Fax: (705) 235-7279
Attn.: Donald Dekker

Northern College

Sault College
443 Northern Avenue, P.O. Box 160
Sault Ste. Marie, Ontario
P6A 5L3
Phone: (705) 759-6774 Ext. 444
Fax: (705) 759-1319
Attn.: Dorothy Mihell

Sault College

Seneca College
1750 Finch Avenue East
Willowdale, Ontario
M2N 5T7
Phone: (416) 491-5050
Fax: (416) 491-3081
Attn.: Beryl Nash Ext. 2487 (Registration)
Barry Kavanaugh Ext. 2428 (Program Contact)

Seneca College

Make Cheque Payable To:

Sheridan College
Dept. of Civil Technology
McLaughlin Rd., P.O. Box 7500
Brampton, Ontario
L6V 1G8
Phone: (416) 450-4538
Fax: (416) 459-7054
Attn.: Odette Iskander

Sheridan College

Sir Sandford Fleming College
Terrain & Water Resources
School of Natural Resources
P.O. Box 8000
Lindsay, Ontario
K9V 5E6
Phone: (416) 324-9144
Fax: (416) 324-9716
Attn.: Steven Thompson

Sir Sandford Fleming College

St. Clair College
Continuing Education Dept.
2000 Talbot Road W.
Windsor, Ontario
N9A 6A5
Phone: (519) 972-2711
Fax: (519) 966-2737
Attn.: Thelma Serviss Ext. 499 (Registration)
Gary Dmytrow Ext. 381 (Program Content)

St. Clair College

St. Lawrence College
P.O. Box 6000
King & Portsmouth Avenue
Kingston, Ontario
K7L 5A6
Phone: (613) 544-5400 Ext. 1364
Fax: (613) 545-3920
Attn.: John Mason

St. Lawrence College

PREREQUISITES

Prerequisites are specified for some courses. Please see course outline for prerequisite details.

REGISTRATION FEE

Registration fees paid to the Treasurer of Ontario are non-refundable if the M.O.E. Training Unit is not advised by the application deadline. Full charges will be applied if the participant fails to attend the course. For information on college refund policy, inquire directly to the individual college(s).

FEDERAL GOODS AND SERVICES TAX

As of January 1, 1991 all courses offered in this calendar have become subject to the seven per cent (7%) federal government's Goods and Services Tax. This tax will be added on to the existing fee which is shown on each individual course outline. Thus, the enrolment fee will be calculated as follows:

$$\begin{array}{r} \$ 500.00 \text{ FEE (as stated in course outline)} \\ + \quad 35.00 \text{ GST } (\$500.00 \times .07) \\ \hline = \$ 535.00 \end{array}$$

NOTE: GST does not apply to any fee paid by Ontario Public Service journal entry.

PRE-COURSE STUDY

When applicable, pre-course material will be forwarded to each applicant. It is essential that applicants review the study material provided. For certain courses the applicant will be required to submit solutions to problems forwarded with the study material.

TRAVEL AND ACCOMMODATION

Travel and accommodation arrangements, including reservations, are the responsibility of the participant.

STUDENT EVALUATION PROCESS

The appropriate course descriptions show the minimum average to be attained for successful completion of the course.

As do many other organizations, such as the WPCF, AWWA and APWA, the Ontario Ministry of the Environment now awards Continuing Education Units (CEUs) to participants who successfully complete certain courses. A permanent record of CEUs awarded to individuals will be maintained by the Training and Certification Section.

CEUs are awarded on the basis that one (1) CEU is equal to ten (10) contact hours of formal instruction in job related training. For example, 2.5 CEUs will be awarded for successful completion of the Activated Sludge Course, since it involves approximately 25 hours of formal instruction excluding the review and examination. The assigned value is shown in the appropriate course descriptions in this publication.

FREEDOM OF INFORMATION AND PRIVACY ACT

The Ministry of the Environment is unable to provide employers of course participants with the participant's academic standing at any point during the course. Due to the implementation of the Province's Freedom of Information and Privacy Protection Act the participant's final course mark is considered to be personal information and must be treated as such. As a result, the Ministry of the Environment will only be able to inform the participant's employer whether or not the student has achieved the minimum requirements for the successful completion of the course (i.e. passing or failing). It is the participant's prerogative whether or not to inform their employer of their actual course mark.

TRAINING MANUALS

Prices quoted for training manuals are subject to change without notice.

1. Ministry of the Environment

Training manuals published by the Ministry are available for purchase from:

Mail Orders

Publications Ontario
Ministry of Government Services
880 Bay Street, 5th Floor
Toronto, Ontario M7A 1N8
Telephone: (416) 326-5300
Toll Free: 1-800-688-9938

Bookstore

Publications Ontario
Ministry of Government Services
880 Bay Street, Main Floor
Toronto, Ontario M7A 1N8
Telephone: (416) 326-5320

These include:

Basic Sewage Treatment Operation	15.00
Activated Sludge Process	9.00
Primary Treatment and Sludge Digestion	7.50
Basic Water Treatment Operation	18.00
Surface Water Treatment Operation	11.00
Basic Gas Chlorination	14.00
Preventive Maintenance	27.00
Mathematics for Water & Wastewater Operators	6.50
Confined Space Entry	8.00
Lab Skills for Plant Operators, Vol. 1	10.00
Lab Skills for Plant Operators, Vol. 2	10.00

2. American Publications

Textbooks provided in the Wastewater Collection and Small Water Supply Systems courses are:

Operation & Maintenance of Wastewater Collection Systems, Vol. 1
Small Water System Operation and Maintenance

These are American publications and prices may vary. They can be ordered from:

Kenneth Kerri
Office of Water Programs
California State University, Sacramento
6000 J. Street
Sacramento, California
U.S.A. 95819--2794

BRAMPTON TRAINING CENTRE

100 FARMHOUSE COURT
BRAMPTON, ONTARIO

Parking is free.

Directions to Brampton:

From Eastern Regions of Ontario:
Starting at the junction of Highway
(Hwy) 400 and Hwy 401

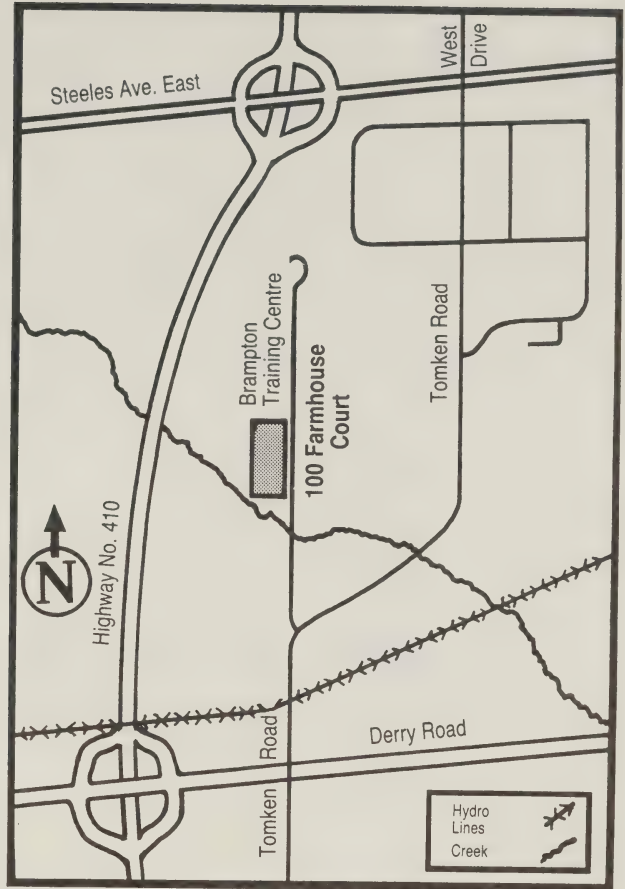
- Proceed westbound
- Exit to Hwy 410 northbound to Brampton
- Turn right on Derry Road eastbound
- Proceed eastbound to the first intersection which is Tomken Road
- Turn left on Tomken Road
- Turn left on Farmhouse Court
- 100 Farmhouse Court is on the westside of the road

From Western Regions of Ontario:

- Proceed eastbound on Hwy 401
- Exit northbound on Hwy 410
- As above

NOTE: Highway 403 does not yet connect with Hwy 410, thus those coming from the Niagara Peninsula must connect with Hwy 401 and exit before Hwy 10 north.

All courses will commence at 8:15 a.m. (promptly) and finish at 4:30 p.m. unless otherwise indicated in the course descriptions. Registration begins at 8:15 a.m. until 9:00 a.m.



UTILITY OPERATIONS TRAINING

ELECTRICAL AWARENESS WORKSHOP

COURSE NUMBER: OPS001

PURPOSE: To acquaint water/wastewater operators with the hazards of electricity.

TARGET GROUP: Water and Wastewater operations personnel who do not hold an apprentice certification in the electrical trade but who carry out routine maintenance duties during their daily job function.

PREREQUISITES: The candidate must be employed in water or wastewater utility operations and/or maintenance.

SCOPE: The topics to be covered include:

- Fundamentals of electricity
- Code terminology
- Safety practices
- Effects of shock on the body
- First aid for electrical victims
- Electrical lock-out procedures
- Magnetic starters
- Electrical testing devices
- Hands on practice

FORMAT:

- Lectures
- Group Discussion
- Hands on familiarization with various equipment and testing devices
- Audio visual

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided

CLASS SIZE: 15 people

DURATION: 3 days (8:30 to 4:30)

EVALUATION PROCESS: No formal evaluation

CEUs AWARDED: 2.0

FEE: \$ 300.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 1-3, 1991 Nov. 26-28, 1991	Mar. 11, 1991 Oct. 1, 1991	Lambton College To be announced.

BASIC WASTEWATER TREATMENT

COURSE NUMBER: OPS100

PURPOSE: To increase participants' on-the-job efficiency of wastewater treatment plant operators. It stresses "the need to know" of all processes associated with wastewater treatment.

TARGET GROUP: Operators in training and individuals who want to learn and/or increase their knowledge of wastewater treatment processes.

PREREQUISITES:

- i) Employment and desirably 6 months experience in the operation of a wastewater treatment plant.
- ii) Grade 12 academic standing or equivalent.

SCOPE: Participants will learn basic concepts of:

- Wastewater Characteristics
- Bacteriology/Microbiology
- Primary Treatment
- The Activated Sludge Process
- Sludge Digestion
- Sludge Handling
- Chlorination/Disinfection
- Laboratory Testing
- Sampling/Record Keeping
- Safety

FORMAT:

- Lectures
- Group discussions
- Laboratory Exercises
- Field Trip

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- i) Review the Ministry manual, Basic Wastewater Treatment
- ii) Complete the exercise in the Ministry manual, Mathematics for Water and Wastewater Operations.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST at Brampton
\$ 600.00 +GST at College

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 8 - May 6, 1991 (Mon. only)	Mar. 18, 1991	Centennial
Apr. 8-12, 1991	Mar. 18, 1991	Sheridan
Apr. 15-19, 1991	Mar. 25, 1991	Lambton
May 27-31, 1991	May 6, 1991	Sault
Sept. 16-20, 1991	Aug. 1, 1991	Brampton Training Centre

MATHEMATICS FOR WATER AND WASTEWATER OPERATIONS

COURSE NUMBER: OPS101

PURPOSE: To ensure that operators have a working understanding of the practical mathematics necessary for the performance of their job.

TARGET GROUP: Water and wastewater operators who feel that they need a refresher course in basic mathematics as preparation for other courses or for certification exams. This course is strongly recommended for those who lack Grade 12 math.

SCOPE:

- Basic concepts of mathematics
- Working with formulas
- Metric conversions
- Pump rate (feed rate) calibrations
- Laboratory/plant solution calculations
- Tank calibrations
- Specific gravity

MATERIALS AVAILABLE:

- Mathematics for Water & Wastewater Operations

FORMAT:

- tutorial
- workshop
- home study

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- familiarize themselves with the types of calculations necessary in the operation of their plant
- complete first home study assignment and bring it with them to class
- review Ministry manual Mathematics for Water and Wastewater Operations

CLASS SIZE: 15 people max.

DURATION: 3 days (8:30 to 4:30)

EVALUATION PROCESS:

- Home study
- Daily mini tests
- Final examination
- Class participation
- Overall grade of 70% is required for successful completion of course

FEE: \$ 300.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 1-3, 1991	Mar. 11, 1991	Sheridan
May 14-16, 1991	Apr. 23, 1991	Mohawk
May 20-22, 1991 *en français	Apr. 29, 1991	La Cité
June 17-19, 1991	May 27, 1991	Seneca

BASIC WATER TREATMENT OPERATION

COURSE NUMBER: OPS150

PURPOSE: To increase participant's on-the-job efficiency in water treatment. This is a prerequisite to the Surface Water Treatment Course.

TARGET GROUP: Water treatment plant operators and others who want to know all water treatment processes.

PREREQUISITES:

- i) Employment and desirably six months experience in the operation of water treatment plants
- ii) Desirably Grade 12 academic standing

SCOPE: The participants will have the opportunity to acquire knowledge of the following basic concepts:

- Water Sources
- Physical and chemical characteristics
- Coagulation, flocculation and sedimentation
- Filtration
- Chlorination
- Water Microbiology and Sampling
- Safety
- Records Keeping
- Basic Laboratory Tests

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- i) Review the Ministry manual, Basic Water Treatment Operation
- ii) Complete the exercises in the Ministry manual, Mathematics for Water and Wastewater Operations

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST at Brampton
 \$ 600.00 +GST at College

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 2-6, 1991	Mar. 12, 1991	St. Lawrence
Apr. 8-12, 1991	Mar. 18, 1991	Mohawk
Apr. 8 - May 6, 1991 (Mon. only)	Mar. 18, 1991	Centennial
Apr. 15-19, 1991	May 6, 1991	Sault
May 27-31, 1991	May 6, 1991	Mohawk
May 27-31, 1991	May 6, 1991	Lambton
Oct. 7-11, 1991	Aug. 15, 1991	Brampton Training Centre
Jan. 20-24, 1992	Nov. 18, 1991	Brampton Training Centre

BASIC GAS CHLORINATION

COURSE NUMBER: OPS180

PURPOSE: To familiarize the participants with the operation of various types of gas chlorination equipment, as well as to teach safety, maintenance and troubleshooting procedures.

TARGET GROUP: New and/or less experienced operators.

PREREQUISITES: Employment in a water or wastewater treatment plant or as an operator of gas chlorination equipment used in industry or recreational facilities.

SCOPE: Participants will have the opportunity to acquire knowledge of the following basic concepts:

- Chlorination theory
- Components of a gas chlorination installation
- Control systems
- Storage and handling of chlorine gas cylinders
- Safety practices
- Chlorination equipment and components
- Start-up and shut-down procedures
- General maintenance
- Troubleshooting
- Chlorination laboratory tests

FORMAT: "Hands on" participation, lectures, discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Basic Gas Chlorination manual, will be provided. Participants are encouraged to review the material before attending the course.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final written examination
- Hands-on troubleshooting testing
- Overall grade of 70%

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST at Brampton
\$ 600.00 +GST at College

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 22-26, 1991	Apr. 1, 1991	Mohawk
May 13-17, 1991	Apr. 15, 1991	Mohawk
May 27-31, 1991	May 6, 1991	Brampton Training Centre
Nov. 4-8, 1991	Sept. 16, 1991	Brampton Training Centre
Feb. 10-14, 1992	Dec. 20, 1991	Brampton Training Centre

CONFINED SPACE ENTRY

COURSE NUMBER: OPS185

PURPOSE: To familiarize participants with the safe practices and procedures for entry and the correct operation and maintenance of equipment.

TARGET GROUP: Operations and supervisory personnel.

PREREQUISITES: Desirably, candidates for this workshop should possess a First Aid certificate and be training in Cardio-Pulmonary Resuscitation. In addition, all candidates should be in good physical condition so as to perform the required hands-on tasks.

SCOPE: Participant will have the opportunity to learn:

- Safety requirements including a review of the occupational health and safety act, associated regulations and MOE safety policy
- Physical and atmospheric hazards of confined spaces
- Protective equipment
- Respiratory protection
- Atmospheric sensing and detection
- Entry procedures
- Emergency and rescue techniques

FORMAT:

- Lectures
- Demonstrations
- Hands-on practice with equipment
- Performing confined space entries

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. Attendees should review the manual, the Occupational Health and Safety Act and Regulations for Industrial Establishments. All candidates should have a copy of the Act and Regulations in their possession prior to attending the workshop. These are available from Publication Services.

CLASS SIZE: 18 people

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Demonstrated technical competency to safely enter a confined space.
- Overall grade of 70% required for successful completion of the course.

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST at Brampton
\$ 600.00 +GST at College

COURSE DATE	APPLICATION DEADLINE	LOCATION
May 27-31, 1991	Apr. 30, 1991	Brampton Training Centre
June 3-7, 1991	May 13, 1991	Lambton
Aug. 26-30, 1991	Aug. 5, 1991	Lambton
Sept. 23-27, 1991	Aug. 2, 1991	Brampton Training Centre
Feb. 17-21, 1992	Jan. 13, 1992	Brampton Training Centre

ACTIVATED SLUDGE

COURSE NUMBER: OPS200

PURPOSE: To sharpen the operator's knowledge of process control and troubleshooting.

TARGET GROUP: Operators employed as or likely to be promoted to, shift supervisor, operator-in-charge or chief operator of an activated sludge plant.

PREREQUISITES: Successful completion of the Ministry of the Environment Basic Wastewater Treatment Course; or Instructor's permission.

SCOPE: Participants will have the opportunity to learn:

- Activated Sludge Operating Principles and Processes
- Factors Affecting the Process
- Sampling and Flow Measurement
- Monitoring Requirements
- Identification and Solution of Operating Problems
- Phosphorus Removal
- Microscopic Examination
- Laboratory Tests including D.O., Phosphorus, BOD, Suspended Solids, Settling Test, Oxygen Uptake
- Activated Sludge Calculations
- Stock Solutions and Chemical Feed Rate Calculations
- Nitrification/Denitrification

FORMAT: "Hands on" participation, laboratory exercises, lectures

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this workshop an applicant must:

- i) Review the Ministry manual on Activated Sludge Process
- ii) Complete the exercises in the Ministry manual, Mathematics for Water and Sewage Operators.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Hands-on lab tests
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST at Brampton
\$ 600.00 +GST at College

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 15-19, 1991	Mar. 25, 1991	Mohawk
May 27-31, 1991	May 6, 1991	Loyalist
Oct. 21-25, 1991	Sept. 16, 1991	Brampton Training Centre
Dec. 2-6, 1991	Nov. 4, 1991	Brampton Training Centre
Mar. 16-20, 1992	Feb. 10, 1992	Brampton Training Centre

WASTEWATER SLUDGE TECHNOLOGY

COURSE NUMBER: OPS210

PURPOSE: To provide participants with the knowledge of current technologies of sludge management used in the overall wastewater treatment process.

TARGET GROUP: Operators employed as shift supervisors, operator-in-charge or chief operators and other individuals who wish to increase their knowledge of physical, chemical and biological sludge handling processes.

PREREQUISITES: Successful completion of the Ministry Basic Wastewater Treatment Course of equivalent.

SCOPE: Participants will have the opportunity to learn:

- Sewage and Sludge Characteristics
- Sludge Conditioning
- Sludge Digestion
- Digester Gas Systems
- Dewatering
- Laboratory analysis
- Sludge Utilization
- Incineration
- Landfarming and Landfilling
- Equipment Maintenance

FORMAT: "Hands on" participation, laboratory exercises, lectures, mathematics exercises

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this workshop, the applicant must:

- i) Review the course training manual
- ii) Complete the exercises in the Ministry manual Mathematics for Water and Sewage Operators.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Feb. 3-7, 1992	Dec. 15, 1991	Brampton Training Centre

DIGESTER GAS SYSTEMS OP/MAINTENANCE

COURSE NUMBER: OPS215

PURPOSE: To upgrade the participant's knowledge and skills of operating and maintaining the gas system in a wastewater treatment plant.

TARGET GROUP: Individuals who, are responsible for or want to increase their knowledge of operating and maintaining the gas system in a wastewater treatment plant.

PREREQUISITES: The applicant must be employed in the maintenance of the gas system in a wastewater treatment plant. Desirably the applicant should have completed the MOE Wastewater Sludge Technology and have training in the procedures for safe entry into confined spaces.

SCOPE: Participants will have the opportunity to learn the requirements of the Energy Act 1971 and related Regulations with regard to:

- Digestion Process and Gas Production
- Digester Gas System Components
- Gas Piping
- Fuels and Combustion
- Safety
- Fuels Safety Regulations and Codes

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Applicants ensure that they are familiar with the material before arrival at the course.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course.

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Sept. 9-13, 1991	Aug. 2, 1991	Brampton Training Centre

OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS

COURSE NUMBER: OPS220

PURPOSE: To increase the participant's on-the-job efficiency in operating and maintaining a collection system and correcting malfunctions of equipment.

TARGET GROUP: Individuals who are directly involved in Collection Systems, Maintenance and repair.

PREREQUISITES:

- i) Employment in the operation and/or maintenance of a wastewater collection system
- ii) Desirably Grade 12 academic standing

SCOPE: Participants will have the opportunity to learn the basic principles of:

- Design Parameters
- Excavation backfill restoration
- Lift Stations
- Planning for Emergency Services
- TV Inspection and Testing underground
- Cleaning, Maintenance and Repair
- Records and Organization
- Trenching safety administration and records safe procedures

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: An applicant must review the reference notes on Operation and Maintenance of Wastewater Collection systems.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
May 6-10, 1991 Jan. 27-31, 1992	Apr. 10, 1991 Dec. 10, 1991	Brampton Training Centre Brampton Training Centre

OPERATION AND MAINTENANCE OF WASTEWATER PUMP STATIONS

COURSE NUMBER: OPS221

PURPOSE: To increase participant's on-the-job efficiency in operating and maintaining lift stations and related equipment.

TARGET GROUP: Entry level operations staff and others who wish to build on previous learning.

PREREQUISITES:

- i) Employed in the operation and/or maintenance of a wastewater lift station
- ii) Desirably Grade 12 academic standing

SCOPE: Participants will have the opportunity to acquire:

- Sewage Characteristics
- Safety/Working in Confined Spaces
- Station Control Systems
- Pump and Motor Applications
- Pump Performance
- Station Start-up and Shut-down
- Routine and Preventive Maintenance
- Records and Inspection
- Packing and Mechanical Seals

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: An applicant must review pre-course study material.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 8-12, 1991	Mar. 20, 1991	Brampton Training Centre
June 10-14, 1991	May 13, 1991	Brampton Training Centre

SURFACE WATER TREATMENT WORKSHOP

COURSE NUMBER: OPS250

PURPOSE: To increase participant's knowledge and skills in water treatment. It is specifically directed to an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a water treatment plant.

TARGET GROUP: Experienced water treatment plant operators who are employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a water treatment plant.

PREREQUISITES: Successful completion of the Ministry of the Environment Basic Water Treatment Operation course, or equivalent.

SCOPE: The participants will have the opportunity to learn the concepts of:

- Basic water chemistry
- Microbiological considerations
- Water treatment chemicals
- Coagulation
- Filtration
- Taste and odour control
- Laboratory tests
- Problem solving
- Stock solution preparation
- Dosage calculations and chemical feed rates

FORMAT:

- Lectures
- discussions
- Laboratory exercises

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this workshop an applicant must:

- Review the Ministry manual, surface Water Treatment
- Complete the exercises in the Ministry manual, Mathematics for Water and Wastewater Operations.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Hands-on lab tests
- Overall grade of 70% is required for successful completion of course.

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST at Brampton
\$ 600.00 +GST at College

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 8 - May 6, 1991*	Mar. 18, 1991	Centennial
May 6-10, 1991	Apr. 15, 1991	Sault
May 13-17, 1991	Apr. 22, 1991	Loyalist
Nov. 4-8, 1991	Oct. 7, 1991	Brampton Training Centre
Mar. 9-13, 1992	Feb. 10, 1992	Brampton Training Centre

* (daytimes - 5 consecutive Mondays)

SMALL WATER SUPPLY SYSTEMS OPERATOR

COURSE NUMBER: OPS255

PURPOSE: To increase participant's knowledge and skills of operating and maintaining small systems which employ minimum treatment.

TARGET GROUP: Entry level and/or less experienced operators of small water supply systems.

PREREQUISITES:

- Six to twelve months experience in a water supply system
- Desirably Grade 12 Academic Standing

SCOPE: The participants will have the opportunity to learn the basic principles of:

- Characteristics of ground water
- Well pumps and maintenance
- Types of valves and maintenance
- Meter maintenance
- Small plant water treatment
- Disinfection
- Safety
- Storage facilities

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Participants are required to review this material prior to the date of the course.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final written examination
- Overall grade of 70%

CEUs AWARDED: 2.5

FEE: \$ 600.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
If there is sufficient demand.		To be announced.

LABORATORY SKILLS FOR PLANT OPERATORS

COURSE NUMBER: OPS260

PURPOSE: To provide participants with the basic skills to carry out in-plant testing and analysis in either a water or wastewater treatment environment.

TARGET GROUP: Operators and individuals whose responsibility is to carry out in-plant testing and analysis.

PREREQUISITES:

- Two or three years experience in plant operations
- Successful completion of the MOE Basic Wastewater Treatment course and/or Basic Water Treatment Operations course
- Desirably successful completion of the MOE Activated Sludge Course and/or Wastewater Sludge Technology and/or Surface Water Treatment Course, or acceptable equivalents

SCOPE: Participants will have the opportunity to acquire basic knowledge of:

- Laboratory chemical principles
- Laboratory techniques including safety
- Operation of laboratory instruments
- Quality control
- Laboratory testing using:
 - Turbidimeters
 - Spectrophotometers
 - Colour Comparators
 - Amperometric Titrators
 - Microscope
 - Various Lab Glassware
 - Jar Testers
 - D.O. Meters
 - Analytical Balance
 - Bacti Test Procedures:
 - MF Unit
 - P/A Test

FORMAT:

- Laboratory exercises
- Lectures
- Demonstrations

PRE-COURSE FAMILIARIZATION:

Pre-course study material will be provided. Applicants must ensure that they are knowledgeable in water and wastewater treatment processes.

CLASS SIZE: 15 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final written examination
- Demonstrated ability to carry out laboratory tests
- Overall grade of 70% in the written examination required for successful completion of course.

CEUs AWARDED:

FEE: \$ 600.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Contact M.O.E. registration for information.		To be announced.

INTRODUCTION TO INSTRUMENTATION FOR PLANT OPERATIONS

COURSE NUMBER: OPS265

PURPOSE: To broaden the participant's understanding and knowledge of the benefits and application of instrumentation in water supply and wastewater treatment facilities.

TARGET GROUP: Operators and other WTP or WPCP employees with little or no background in instrumentation.

PREREQUISITES: The applicant should have a good working knowledge of water and/or wastewater utility operation, and;

- Two or three years experience in utility operations
- Successful completion of MOE course in:
 - Basic Wastewater Treatment, Basic Water Treatment or Preventive Maintenance Course
 - Or Instructor's permission

SCOPE: The focus of this course is on the instrumentation currently used in WTP's and WPCP's. Emphasis is placed on the uses and advantages of instrumentation, description of various process control loops, and types of instruments available. Hands-on instruction is included throughout. Topics addressed in this course include:

- Basis electronics and pneumatics
- Reading and calibration of instruments
- Sources of error
- Alarm systems
- Flow, level, pressure and temperature measurement
- Computerization

FORMAT:

- Demonstrations
- Discussions
- Field trip to a wastewater treatment plant

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Before attending, participants should familiarize themselves with the process control instrumentation in their own utilities.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70%

CEUs AWARDED: 2.5

FEE: \$ 600.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
June 17-21, 1991	May 27, 1991	Lambton

OPERATION AND MAINTENANCE OF WATER DISTRIBUTION SYSTEMS

COURSE NUMBER: OPS270

PURPOSE: To increase participant's on-the-job efficiency in operating and maintaining water distribution systems, correcting malfunctions of equipment and performing quality control tests.

TARGET GROUP: New operations staff whose responsibility is to operate, maintain and correct equipment malfunctions.

PREREQUISITES:

- i) Employed in operating and/or maintaining a water distribution system
- ii) Desirably Grade 12 academic standing

SCOPE: The participants will have the opportunity to acquire knowledge of:

- Water sources and treatment
- Factors in planning and design
- Water quality objectives
- Watermain pipes, and joints
- Appurtenances
- Hydraulics
- Leak detection, repair, thawing, restoration
- Cleaning, flushing, disinfection, cross connections
- Reports and records, public relations
- Safety
- Corrosion

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: The applicant must review pre-course study material including the Ministry manual, Operation and Maintenance of Water Distribution Systems.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Jan. 13-17, 1992 Mar. 23-27, 1992	Dec. 9, 1991 Feb. 17, 1992	Brampton Training Centre Brampton Training Centre

PREVENTIVE MAINTENANCE

COURSE NUMBER: OPS280

PURPOSE: To increase the knowledge and on-the-job efficiency of participants in maintaining water and wastewater plant equipment in order to achieve and sustain efficient operations.

TARGET GROUP: Operators or maintenance personnel whose responsibility is to maintain water and wastewater plant equipment.

PREREQUISITES: The candidate must be employed in water or wastewater treatment utility operations and/or maintenance.

SCOPE: Participants will have the opportunity to acquire and increase knowledge in:

- Types of pumps
- Drawings and equipment manuals
- Maintenance of piping and valves
- Lubrication
- Bearings
- Characteristics of material pumped
- Pump system characteristics
- Packing and mechanical seals
- Pump troubleshooting
- Maintenance of standby power units
- Electric motors

FORMAT:

- Lectures
- Hands on participation
- discussions
- Demonstrations

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Preventive Maintenance Course manual will be provided

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

FEE: \$ 500.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Oct. 21-25, 1991	Sept. 9, 1991	Brampton Training Centre
Dec. 2-6, 1991	Oct. 28, 1991	Brampton Training Centre
Mar. 9-13, 1992	Feb. 10, 1992	Brampton Training Centre

VIBRATION ANALYSIS

COURSE NUMBER: OPS285

PURPOSE: To help participants learn to take meaningful vibration measurements. By having all personnel take and record measurements in the same manner, the readings are most accurate and give a better indication of equipment problems.

TARGET GROUP: Operation and maintenance staff including maintenance supervisors.

PREREQUISITES: Participants should have had training in the nomenclature and uses of basic hand tools and precision measuring instruments. Participants should have had hands on experience in mechanical drives, couplings, alignment, bearings and lubrications or their equivalent.

SCOPE: Participants will learn:

- How to use a hand-held meter to take vibration readings from rotating equipment and how to record those readings
- How to use a vibration analyzer
- How to take amplitude and frequency measurements and how to record those measurements.
- The basic steps used to balance rotating equipment will also be taught
- Tour a facility to give the participants an actual site situation

FORMAT:

- Lectures
- Hands on use of equipment in the classroom and on site

CLASS SIZE: 20 people max.

DURATION: 3 days (8:15 to 4:30)

EVALUATION PROCESS: The participants will be expected to demonstrate knowledge by successfully completing a final test by using facility and manufactures procedures to take vibration measurements effectively and to balance rotating equipment.

CEUs AWARDED: 2.0

FEE: \$ 300.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Nov. 13-15, 1991	Oct. 7, 1991	Brampton Training Centre

ALGAE IDENTIFICATION AND ENUMERATION FOR SURFACE WATER TREATMENT PLANT PERSONNEL

COURSE NUMBER: OPS350

PURPOSE: To train surface treatment plant personnel in the identification of algae in order to avoid treatment problems.

TARGET GROUP: Surface water treatment plant personnel, preferably with laboratory experience.

PREREQUISITE: Basic Water Treatment. Trainees are required to bring with them 1 litre samples of: raw water, and backwash water or microstrainer wastewater.

SCOPE: Students will be trained in:

- Techniques of sampling raw water for algae
- The use of a microscope
- The identification of major algae groups
- Operating responses

FORMAT:

- Lecture
- Lab exercises
- In-plant sampling

PRE-COURSE FAMILIARIZATION: Read the course manual.

CLASS SIZE: 10 people

DURATION: 4 days (8:30 to 4:30)

EVALUATION PROCESS: There will be daily quizzes, a written exam and a laboratory practical test. A grade of 70% overall will be required to complete the course.

CEUs AWARDED: 2.5

FEE: \$ 600.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 8 - May 6, 1991*	Mar. 18, 1991	Centennial
May 6-10, 1991	Apr. 15, 1991	Mohawk
June 3-7, 1991	May 13, 1991	Fanshawe

* Daytime - Five (5) consecutive Mondays

ABATEMENT & APPROVALS TRAINING

ENVIRONMENTAL LAW ENFORCEMENT FOR SEWER USE BY-LAW ENFORCEMENT OFFICERS

COURSE NUMBER: BYE100

PURPOSE: To provide participants with basic skills in Sewer Use By-Law Enforcement, as well as knowledge of relevant legislation.

TARGET GROUP: Municipal Sewer Use By-Law Enforcement Officers.

PREREQUISITES: Attendance is restricted to those persons currently employed by municipalities in a sewer use control program.

SCOPE: Participants will have the opportunity to acquire a basic understanding of:

- Evolution of Law in Canada
- Reading the Law
- Model Sewer Use By-Law
- Provincial Offences Act
- Rules of Evidence
- Notetaking
- Interviewing
- Due Diligence Concept
- Investigations
- Court System
- Giving Evidence
- Crown Brief
- OWRA, EPA and Related Legislation

FORMAT:

- Lectures
- Exercises
- Role Play

PRE-COURSE FAMILIARIZATION:

Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: Two 4-day blocks separated by one to two weeks (8:15 to 4:30)

Evening classes or exercises may be part of the curriculum.

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 4

***FEE:** \$ 750.00 +GST

- Includes meals and shared accommodation for both blocks of course

*** Subject to change without notice.**

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 2-5 and 15-18, 1991	Mar. 18, 1991	King City
Sept. 9-12 and 23-26, 1991	Aug. 26, 1991	King City
Mar. 2-5 and 23-26, 1992	Feb. 17, 1992	King City

MONITORING, SAMPLING & INSPECTION FOR SEWER USE BY-LAW ENFORCEMENT OFFICERS

COURSE NUMBER: BYE101

PURPOSE: To provide participants with the necessary skills to understand and enforce the Model Sewer Use By-Law.

TARGET GROUP: Municipal Employees

PRE-REQUISITES: Attendance is restricted to those persons currently employed by municipalities in a sewer use control program.

SCOPE: Participants will have the opportunity to acquire a basic understanding of:

- Effects of Industrial Wastes on Sewage Collection Systems, Sewage Works, the Natural Environment and on Human Health and Safety.
- Limits and requirements of the Model Sewer Use By-Law
- Powers and Responsibilities of the enforcement officer
- Sample location selection and sample taking
- Sample handling
- Use of monitoring equipment
- Safety in Sampling
- Industrial Inspections
- Courtroom protocol

*** Subject to change without notice.**

FORMAT:

- Lectures
- Exercises
- Role Play

PRE-COURSE FAMILIARIZATION:

Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

Evening classes or exercises may be part of the curriculum.

EVALUATION PROCESS:

- daily mini tests
- comprehensive final examination
- overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

***FEE:** \$ 350.00 +GST

- Includes meals and shared accommodation

COURSE DATE	APPLICATION DEADLINE	LOCATION
June 3-7, 1991	May 20, 1991	Sault Ste. Marie
Nov. 18-22, 1991	Nov. 4, 1991	Sault Ste. Marie
Feb. 17-24, 1992	Feb. 3, 1992	Sault Ste. Marie

SAMPLING WORKSHOP

COURSE NUMBER: BYE102

PURPOSE: To provide participants with the necessary skills to:

- understand the intent of the Model Sewer Use By-Law
- collect samples and information to support industrial waste surveys, inspections and investigations
- obtain, preserve, transport, and submit an acceptable sample

TARGET GROUP: Municipal Employees

SCOPE: Participants will have the opportunity to acquire a basic understanding of:

- Selection of a suitable sample location
- Flow measurement
- Selection of sampling and monitoring equipment
- Selection of sample container and preservation method
- Calibration of sampling, monitoring and confined space atmospheric testing equipment installation and programming of automatic sampling equipment
- Sample transportation and handling
- Sample identification and chain of custody procedures
- Personal safety procedures related to sampling activities

*** Subject to change without notice.**

FORMAT:

- Lectures
- Role Play
- Hands-on Practice

PRE-COURSE FAMILIARIZATION:

Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: 3 days (8:15 to 4:30)

EVALUATION PROCESS:

- daily mini tests
- comprehensive final exam
- overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

***FEE:** \$ 250.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Summer 1991		Brampton Training Centre

INDUSTRIAL UNIT PROCESSES FOR SEWER USE BY-LAW ENFORCEMENT OFFICERS

COURSE NUMBER: BYE103

PURPOSE: To provide participants with a basic knowledge of:

- industrial processes
- wastes produced by these processes
- principles of pretreatment processes

TARGET GROUP: Municipal Sewer Use By-Law Enforcement Officers.

PRE-REQUISITES: Attendance is restricted to those persons currently employed by municipalities in a sewer use control program.

SCOPE: Participants will have the opportunity to acquire a basic knowledge of:

- Common industrial unit processes
- Wastewater contaminants associated with specific industrial processes
- Principles of wastewater pretreatment processes
- The principle of materials balance
- Acceptable materials handling methods for pollution prevention

FORMAT:

- Lectures
- Exercises
- Role Play

PRE-COURSE FAMILIARIZATION:

Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

Evening classes or exercises may be part of the curriculum.

EVALUATION PROCESS:

- daily mini tests
- comprehensive final examination
- overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

***FEE:** \$ 400.00 +GST

- Includes meals and shared accommodation

*** Subject to change without notice.**

COURSE DATE	APPLICATION DEADLINE	LOCATION
May 6-10, 1991	Apr. 22, 1991	Southeastern Ontario
Oct. 21-25, 1991	Oct. 7, 1991	Southeastern Ontario
Jan. 20-24, 1992	Jan. 6, 1992	Southeastern Ontario

LOCAL SEWER USE LIMITS SETTING

COURSE NUMBER: BYE104

PURPOSE: To provide participants with fundamental skills to develop local sewer discharge limits for a sewer use control program.

TARGET GROUP: Municipal Employees

SCOPE: Participants will have the opportunity to acquire a basic knowledge of:

- Reasons for developing local limits
- Problems created by industrial discharges
- Sources of numerical environmental criteria
- Procedure for development of local limits
- Use of computer software
- Calculation of limit values

FORMAT:

- Lectures
- Exercises
- Hands-on Practice

PRE-COURSE FAMILIARIZATION:

Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: 3 days (8:15 to 4:30)

Evening classes or exercises may be part of the curriculum.

EVALUATION PROCESS:

- daily mini tests
- comprehensive final examination
- overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

***FEE:** \$250.00 +GST

* Subject to change without notice.

COURSE DATE	APPLICATION DEADLINE	LOCATION
Fall 1991		Southwestern Ontario

SPILLS TO MUNICIPAL SEWERS

COURSE NUMBER: BYE105

PURPOSE: To provide participants with specific training in:

- response to spills and abnormal discharges to sewage works
- contingency planning
- prevention of spills through Best Management Practices (BMP) and Industrial Discharge Management Plans (IDMP)

TARGET GROUP: Municipal, Provincial and Industrial personnel whose responsibilities include usage of and/or management of discharges to sewage works.

SCOPE: Participants will have the opportunity to acquire a basic knowledge of:

- Functions and components of sewage works and treatment processes
- Role of municipal, provincial, federal and industrial sectors
- Health and safety hazards of spills to sewers
- Practical procedures for protection of property, sewage works and treatment processes
- Spill prevention methods
- Fundamentals of contingency planning
- Need for and fundamental application of BMP and IDMP

* Subject to change without notice.

FORMAT:

- Lectures
- Exercises
- Role Play

PRE-COURSE FAMILIARIZATION:

Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: 3 days (8:15 to 4:30)

Evening classes or exercises may be part of the curriculum.

EVALUATION PROCESS:

- daily mini tests
- comprehensive final examination
- overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

***FEE:** \$ 250.00 +GST

- Includes meals and accommodation

COURSE DATE	APPLICATION DEADLINE	LOCATION
Fall 1991		West Central Ontario

INTRODUCTORY ENVIRONMENTAL NOISE

COURSE NUMBER: BYE120

PURPOSE: To increase the participant's on-the-job efficiency and familiarity with environmental noise problems and basic qualitative and quantitative methods of noise assessment.

TARGET GROUP: Municipal By-Law Officers whose responsibility is to investigate noise complaints under a Model Municipal Noise By-Law. MOE staff are expected to take ABT130 instead of this course.

PREREQUISITES: Desirably Grade 12 academic standing.

SCOPE: Participants will have the opportunity to learn:

- Basic Acoustics Concepts
- Introductory Environmental noise Theory
- Sound Level Measurements & Basic Instrumentation
- Introduction to Leg & other noise descriptors
- Measurement & Prediction of Traffic Noise
- Sound Level Adjustments
- Establishment of Noise Criteria
- Noise control By-Law Overview
- Investigation of Stationary Source Noise, Impact Industrial Noise & Blasting
- Noise Complaint Investigation Procedure
- Simple Sound Level Measurements & Traffic Noise Calculations

FORMAT:

- Lectures
- Field Trip
- Discussions
- Workshop Exercises

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Ministry manual, will be provided. Those attending should review and be familiar with format of the Model Municipal Noise Control By-Law

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Graded workshop exercises and final exam
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 800.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
To be announced. To be announced.		George Brown Mohawk

ENVIRONMENTAL NOISE CERTIFICATE

COURSE NUMBER: BYE121

PURPOSE: To upgrade the participant's knowledge in noise investigations of simple nature.

TARGET GROUP: Municipal By-Law Officers whose responsibility is to investigate noise complaints and/or perform the duties of a Municipal Noise Control office. MOE staff are expected to take ABT130 instead of this course.

PREREQUISITES: Successful completion of the Introductory Environmental Noise Course, or prior documented formal training in acoustics subjects at the Introductory Course level

SCOPE: (PART I) Participants will have the opportunity to learn comprehensive principles of:

- Community Noise Characteristics & Automatic Noise Monitors
- Impulse Noise Measurements, Standards & Criteria
- Frequency Analysis of Noise, Tonality, Tape Recording
- Vibration Impact Analysis, Measurement 7 Criteria
- Blasting Noise & Vibration Impact Assessment, Measurements & Prediction Calculation
- Industrial & Commercial Noise Sources Impact Analysis, Advanced Procedures
- Noise & Vibration Abatement Techniques
- Noise Control By-Law (Comprehensive Option), Preparation & Implementation of a Noise By-Law
- Instrumentation Selection, Measurements, Complaint Investigation

FORMAT:

- Lectures
- Workshop Exercises
- Discussion
- Field Trip
- Case Studies
- Detailed Noise Investigation Reports

(PART II) Take Home Assignment Participants will have the opportunity to analyze selected problems in environmental acoustics on their own noise investigations. This part is compulsory for those wishing to receive a Certificate to fulfill duties of a Municipal Noise Control Officer.

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Ministry manual, will be provided. Those attending should be familiar with the format of the Model Municipal Noise Control By-Law, and should review basic procedures and guidelines from the noise By-Law document.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Graded workshop exercises and final examination
- Overall grade of 70% is required for workshop exercises and examination
- 85% grade is required for the take home assignment

CEUs AWARDED: 2.5

FEE: \$ 800.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
Apr. 15-19, 1991 Apr. 29-May 3, 1991	Mar. 25, 1991 Apr. 18, 1991	George Brown Mohawk

MUNICIPAL CLASS EA PROCESS

COURSE NUMBER: APP210

PURPOSE: To increase the knowledge level and understanding of the Municipal Class EA Process.

TARGET GROUP: Planning, engineering and works staff of municipalities firms involved with undertakings and works subject to the Class Environmental Assessment process.

SCOPE:

- The purpose of the legislation
- The history of its development
- Overview of the EA process
- Details of the Class process
- Informal hearings, documentation, public consultation and other aspects

FORMAT:

- Lectures
- Case studies
- Discussions
- Exercises

PRE-COURSE FAMILIARIZATION: Participant will be provided with an information kit which should be reviewed prior to their attendance.

CLASS SIZE: 20 people

DURATION: 2 days (8:30 to 4:30)

FEE: \$ 275.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
June 4-5, 1991	May 14, 1991	Sault

ENVIRONMENTAL NOISE IN LAND USE PLANNING

COURSE NUMBER: APP300

PURPOSE: To increase the participant's knowledge of how to carry out noise studies and prepare acoustical reports.

TARGET GROUP: Individuals responsible for the preparation, review and approval of new land use development including municipal and provincial planning and building department staff, urban planners, engineers, architects and developers.

SCOPE: Participants will have the opportunity to review relevant topics included in the Environmental Noise Certificate course and acquire extensive knowledge of:

- Land Use Planning Concepts & Procedures
- Planning Process in Ontario
- Analysis of Community Noise
- Sound Level Limits & Criteria
- Prediction of Road Traffic & Train Noise Levels
- Aircraft Noise Contours; Analysis of Noise Control Measures
- Prediction of Sound Barrier Attenuation
- Building Acoustics & Material
- Measurement of sound with Sound Level Meters
- Calculation Workshop
- Report Writing & Procedures

FORMAT:

- Lectures
- Workshop Exercises
- Discussions
- Field Trip

PRE-COURSE FAMILIARIZATION: Pre-course study material, including manuals will be provided. Candidates, who have not had suitable previous formal training are advised to review the relevant parts of the Introductory and Certificate Environmental Noise courses.

CLASS SIZE:

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: \$ 800.00 +GST

COURSE DATE	APPLICATION DEADLINE	LOCATION
To be announced. June 10-14, 1991	May 20, 1991	George Brown Mohawk

TECHNICAL TRAINING

SEWER & WATERMAIN CONSTRUCTION INSPECTORS COURSE

COURSE NUMBER: TEC350

PURPOSE: To broaden the participant's understanding and knowledge of inspecting sewer and watermain construction projects.

TARGET GROUP: Junior to intermediate level individuals in the private or public sector whose responsibility is to inspect sewer and watermain construction projects.

PREREQUISITES: Candidates for this course should have a basic understanding of sewer and watermain systems.

SCOPE: The course includes presentations on and discussions of the following topics:

- Basic Elements of Contract Documents
- Environmental Considerations
- Construction Layout
- Traffic Control
- Sewer Installation and Testing
- Sewer and Watermain Design Principles
- Construction Safety
- Excavation and Backfill
- Dewatering Methods
- Pipe Material and Installation
- Watermain Installation, Testing, Cleaning & Disinfection
- Soils in Construction
- Blasting Techniques and Blasting Control
- Restoration
- Inspector's Duties and Records
- Tunnelling

NOTE: This course is developed and conducted jointly with the Ontario Municipal Engineers' Association.

REGISTRATION for this course should be made through Sir Sandford Fleming College. For further information please call (705) 749-5530 and ask for the Conference Centre.

FORMAT:

- Lectures
- Discussions
- Case Studies

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Participants attending this course should be familiar with the Regulations in their own area.

CLASS SIZE: 110 people (2 classes of 55)

DURATION: 5 days (8:15 to 5:15) with evening sessions

EVALUATION PROCESS:

- Comprehensive final examination
- Overall grade of 60% is required for successful completion of the course.

CEUs AWARDED: 3.0

FEE: For live-in students, the fee is \$875.00 (includes GST) which includes course materials, meals and double room accommodation for 5 days. Single occupancy rate is \$1,025.00 (includes GST), (only 20 single rooms are set aside). Because of the long hours of study, commuting is not recommended.

COURSE DATE	APPLICATION DEADLINE	LOCATION
Mar. 2-6, 1992	Jan. 20, 1992	Nottawasaga Inn

SEWER DESIGN

COURSE NUMBER: TEC400

PURPOSE: To broaden the participant's understanding and knowledge of the design of Sewer systems.

TARGET GROUP: Junior to intermediate level individuals whose responsibility is to design sewer systems.

PREREQUISITES: Candidates for this course should have a basic understanding of sewer design principles and should be employed in the design of Sewer Systems.

SCOPE: Participants will have the opportunity to acquire a comprehensive knowledge of:

- Evolution of sewers
- Stormwater management
- Structural aspects of sewer design
- Legal implications of sewer design
- Sewer maintenance & rehabilitation
- Combined sewer overflow
- Water quality
- Sewer design
- Computer models
- Approvals process for sewer design
- Hydrology in urban areas
- Sewer design problem calculations
- Hydraulic aspects of design
- Design considerations with other utilities

FORMAT:

- Lectures
- Discussions
- Workshops

PRE-COURSE FAMILIARIZATION:

- i) Review the lecture notes and other material mailed out for pre-course study
- ii) Answer the pre-course study problems, which will be discussed during the course

CLASS SIZE: 60 people

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Comprehensive final examination
- Overall grade of 60% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: For live-in students, the fee is \$875.00 (includes GST), which includes materials, meals and double room accommodation for five (5) days at Nottawasaga Inn, Alliston, Ontario.

Single occupancy rate is \$1,025.00 (includes GST), which includes materials and meals for five (5) days. (Only 20 rooms are set aside.)

For commuters, the fee is \$525.00 (includes GST), which includes lunch and coffee breaks.

NOTE: This course is developed and conducted jointly with the Ontario Municipal Engineers' Association.

REGISTRATION for this course should be made through Sir Sandford Fleming College. For further information please call (705) 749-5530 and ask for the Conference Centre.

COURSE DATE	APPLICATION DEADLINE	LOCATION
Sept. 9-13, 1991	July 29, 1991	Nottawasaga Inn

WATERMAIN DESIGN

COURSE NUMBER: TEC401

PURPOSE: To broaden the participant's understanding and knowledge of the design of watermain systems.

TARGET GROUP: Junior to intermediate level individuals whose responsibility is to design watermain systems.

PREREQUISITES: Candidates for this course should have a basic understanding of watermain design principles and should be employed in the design of Watermain Systems.

SCOPE: Participants will have the opportunity to acquire a comprehensive knowledge of:

- Project Procedures
- Physical Layout of Watermain Systems
- Watermain Pipe Materials
- Sources of Water Supply
- Watermain Insulation
- Watermain Appurtenants & Testing
- Water Valves
- How Design Affects Maintenance
- Design Considerations with other Utilities
- Estimating Water Demand
- Basic Hydraulics
- Design Problem Calculations
- Description of Loop Analysis
- Watermain Corrosion

FORMAT:

- Lectures
- Discussions
- Workshops

PRE-COURSE FAMILIARIZATION:

- i) Review the lecture notes and other material mailed out for pre-course study
- ii) Answer the pre-course study problems, which will be discussed during the course

CLASS SIZE: 60 people

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Comprehensive final examination
- Overall grade of 60% is required for successful completion of the course

CEUs AWARDED: 2.5

FEE: For live-in students, the fee is \$875.00 (includes GST), which includes materials, meals and double room accommodation for five (5) days at Nottawasaga Inn, Alliston, Ontario.

Single occupancy rate is \$1,025.00 (includes GST), which includes materials and meals for five (5) days. (Only 20 rooms are set aside.)

For commuters, the fee is \$525.00 (includes GST), which includes lunch and coffee breaks.

NOTE: This course is developed and conducted jointly with the Ontario Municipal Engineers' Association.

REGISTRATION for this course should be made through Sir Sandford Fleming College. For further information please call (705) 749-5530 and ask for the Conference Centre.

COURSE DATE	APPLICATION DEADLINE	LOCATION
Sept. 9-13, 1991	July 29, 1991	Nottawasaga Inn

APPENDICES

COURSE REGISTRATION FORM

M.O.E. EXTERNAL TRAINING

Procedure:

1. Complete form in full and forward to location where course is being held (see reverse for addresses).
2. Make cheque payable to the agency which is delivering the course.
3. Confirmation of enrolment will be sent from College / Training Centre.

APPLICANT INFORMATION_____
LAST NAME_____
FIRST NAME_____
INITIAL_____
HOME ADDRESS (Number, Street, City, Province, Postal Code)(_____) _____
HOME TELEPHONE NUMBER**EMPLOYER INFORMATION**_____
EMPLOYER'S NAME_____
EMPLOYER'S ADDRESS (Number, Street, City, Province, Postal Code)_____
APPLICANT'S POSITION WITH EMPLOYER(_____) _____
BUSINESS TELEPHONE NUMBER**COURSE INFORMATION**_____
COURSE NAME_____
COURSE NUMBER_____
LOCATION OF COURSE (Sponsoring Agency)_____
COURSE DATE**IS CHEQUE ENCLOSED?**

YES _____ NO _____

I hereby grant permission to the Ministry of the Environment Training & Certification Section and the above-mentioned college to exchange test and exam scores for the purpose of evaluating my performance in any course which I attend.

Applicant's Signature: _____

Date: _____



THE ONTARIO ENVIRONMENTAL TRAINING CONSORTIUM

ADDRESSES AND CONTACT NAMES

Ministry of the Environment
BRAMPTON TRAINING CENTRE
 135 St. Clair Ave. West
 Toronto, Ontario
 M4V 1P5
 Phone: (416) 323-4615
 Fax: (416) 323-4441
 Attn.: Angie DeLeon

Algonquin College
 1385 Woodroffe Avenue
 Nepean, Ontario
 K2G 1V8
 Phone: (613) 727-7627
 Fax: (613) 727-7684
 Attn: Al Spriggs

Centennial College
 School of Engineering
 Technology
 Progress Court
 P.O. Box 631, Station "A"
 Scarborough, Ontario
 M1K 5E9
 Phone: (416) 439-4708
 Fax: (416) 431-2597
 Attn: Peter Hart

Fanshawe College
 School of Continuing
 Education
 P.O. Box 4005
 London, Ontario
 N5W 5H1
 Phone: (519) 452-4436
 Fax: (519) 452-1342
 Attn: Jan Novotny

George Brown College
 Dept. of Computer Science
 & Eng. Technology
 P.O. Box 1015, Station "B"
 Toronto, Ontario
 M5T 2T9
 Phone: (416) 944-4376
 Fax: (416) 944-4643
 Att.: Richard Smith

Georgian College
 School of Continuing Learning
 Georgian Drive
 Barrie, Ontario
 K6J 3S2
 Phone: (705) 728-1951 Ext.573
 Fax: (705) 722-5123
 Attn.: Paul Lima

La Cite Collegiale
 838 Pitt Street
 Cornwall, Ontario
 K6H 421
 Phone: (613) 938-2483
 Fax: (613) 937-1509
 Attn.: Renauld Ayotte

Lambton College
 Riverside Campus
 265 N. Front St.
 P.O. Box 969
 Sarnia, Ontario
 N7T 7K4
 Phone: (519) 542-7751
 Fax: (519) 332-6583
 Attn.: Dianne Frenett
 Fitzgerald

Loyalist College
 P.O. Box 4200
 Belleville, Ontario
 K8N 5B9
 Phone: (613) 969-1913
 Fax: (613) 962-7984
 Attn.: Bill Babbit

Mohawk College
 Dept. of Physical Sciences
 Fennell Ave. & West 5th St.
 Box 2034
 Hamilton, Ontario
 L8N 3T2
 Phone: (416) 575-2148
 Fax: (416) 575-2379
 Attn.: Rick MacDonald

Sault College
 443 Northern Avenue
 P.O. Box 180
 Sault Ste. Marie, Ontario
 P6A 5L3
 Phone (705) 759-6774 Ext.444
 Fax: (705) 759-1319
 Attn.: Dorothy Mihell

Seneca College
 1750 Finch Avenue
 Willowdale, Ontario
 M2N 5T7
 Phone: (416) 491-5050
 Fax: (416) 491-3081
 Attn.: Beryl Nash
 Ext. 2487

Sheridan College
 Dept. of Civil Technology
 McLaughlin Rd., P.O.Box 7500
 Brampton, Ontario
 L6V 1G8
 Phone: (416) 450-4538
 Fax: (416) 459-7054
 Attn.: Odette Iskander

Sir Sandford Fleming College
 Terrain & Water Resources
 School of Natural Resources
 P.O. Box 8000
 Lindsay, Ontario
 K9V 5E6
 Phone: (705) 324-9144
 Fax: (705) 324-9716
 Attn: Steve Thompson

St. Clair College
 Continuing Education Dept.
 2000 Talbot Road W.
 Windsor, Ontario
 N9A 6A5
 Phone: (519) 972-2711
 Fax: (519) 966-2737
 Attn.: Gary Dmyrow

St. Lawrence College
 P.O. Box 6000
 King & Portsmouth Ave.
 Kingston, Ontario
 K7L 5A6
 Phone: (613) 544-5400
 Ext. 1364
 Fax: (613) 545-3920
 Attn.: John Mason

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LAST NAME

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EMPLOYER INFORMATION

EMPLOYER'S NAME

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APPLICANT'S POSITION WITH EMPLOYER

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BUSINESS TELEPHONE NUMBER

COURSE INFORMATION

COURSE NAME

COURSE NUMBER

LOCATION OF COURSE (Sponsoring Agency)

COURSE DATE

IS CHEQUE ENCLOSED?

YES _____ NO _____

I hereby grant permission to the Ministry of the Environment Training & Certification Section and the above-mentioned college to exchange test and exam scores for the purpose of evaluating my performance in any course which I attend.

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 Ext. 1364
 Fax: (613) 545-3920
 Attn.: John Mason

- Please forward your application and cheque DIRECTLY TO THE SPONSORING AGENCY -

ADDITIONAL SERVICES**1. Certification of Water and Wastewater Utility Operators:**

With the co-operation and leadership of the Ontario Municipal Engineers Association, the Ministry has established the Ontario Voluntary Certification Program for Operators of Water and Wastewater Utilities. Development of the Program was assisted by representatives of the Ontario Chapter American Public Works Association, Ontario Section American Water Works Association, Ontario Municipal Water Association. Pollution Control Association of Ontario and a selected group of operators representing the Ministry of the Environment, municipal and industrial utilities.

The utility owners and operators are the basic link with the public for an industry responsible for producing potable water and controlling pollution of our natural water resources. The program enhances the operator's professional status by awarding those who meet the program criteria with a certificate of competency which will be recognized in Ontario and in time throughout Canada and possibly certain States.

Qualification for a Certificate of Competency requires a designated level of knowledge operating experience and successful completion of an appropriate examination for the class of certificate for which eligibility has been established. The classification level of the utility determines the level of operator certification. Please direct inquiries regarding the Certification Program to:

Certification Officer
Training and Certification Section
135 St. Clair Avenue West
Toronto, Ontario
M4V 1P5

Telephone: (416) 456-0266

2. In-House Courses

Our Curriculum Development and Training Officers are a group of competent adult education professionals, committed to improving technical effectiveness of personnel engaged in the protection and upgrading of the natural environment. The Curriculum Development and Training Officers are available to advise and assist professional industrial and government organizations in identifying training needs, designing training programs to meet the needs, and delivering and evaluating training programs.

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